

Distributions of heavy metal concentrations in different tissues of the mangrove snail *nerita lineata*

Abstract

This study focused on the distributions of Cd, Cu, Fe, Ni, Pb and Zn in the various tissues (shell, operculum, muscle, digestive cecum, foot, cephalic tentacles, mantle, radular and remainder) of the mangrove snail *nerita lineata* collected from Sungai Janggut, Selangor. Copper and Zn levels in all soft tissues were found to exceed those in the sediment, indicating bioaccumulation of these metals. Fe levels in all soft tissues of the snails were found to be lower than those in the sediment even though Fe is the most abundant metal among the six metals investigated. Cd and Pb levels in soft tissues were also found to be lower than those in the sediment but opposite trends were observed for Cd and Pb levels in the shells. Ni, Cd and Pb levels in the shells were significantly ($p < 0.05$) higher than those in the soft tissues and sediment. However, digestive cecum and remainder showed higher Ni level as compared with sediment. The biota sediments accumulation factor (BSAF) has identified that the shell and operculum were macroconcentrators for Cd, Ni and Pb while all the soft tissues of *n. lineata* were macroconcentrators for Cu (except for muscle) and Zn. The findings indicated that the differences in metal distribution could be attributed to the differences in tissue physiology and metal handling, storage and detoxification strategies.

Keyword: Different tissues; Metal distribution; *Nerita lineata*.